UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,941	09/09/2003	Erik John Burckart	RSW920030104US1	1844

36736 7590 03/03/2008

DUKE W. YEE
YEE & ASSOCIATES, P.C.
P.O. BOX 802333
DALLAS, TX 75380

EXAMINER	
CHEA, PHILIP J	
ART UNIT	**PAPER NUMBER**
2153	

MAIL DATE	DELIVERY MODE
03/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/657,941	BURCKART ET AL.	
	Examiner	Art Unit	
	Philip J. Chea	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-20 have been examined.

Specification

1. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code at least on page 1. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. On page 24, lines 20-29 and page 25, lines 2-5 of the specification the Applicant has provided evidence that the Applicant intends the medium to include signals as such the claim is drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim is not statutory. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical article or object and as such is not a machine or manufacture. Energy is not a combination of substances and therefore not a composition of matter.

The Examiner suggest amending the claim to read "a computer readable storage medium" in order to limit the claim to being only statutory type media.

Any claim not specifically mentioned is rejected by virtue of being dependent on a rejected claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4,8-14,18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michel (US 7,146,429), and further in view of Guha (US 5,897,637), and further in view of Bensoussan et al. (US 6,581,068), herein referred to as Bensoussan.

As per claims 1,11,20, Michel discloses a method of matching a Uniform Resource Locator (URL) to a resource or rule (see column 9, lines 48-51), comprising:

progressively hashing a clause of the URL to generate a hash code for the clause (see column 11 lines 36-45 and Fig. 4A, *describing the hashing of a URL string and showing how a clause (i.e. a part of the URL separated by delimiters: http, org, www, etc.) has a hash code generated)*;

determining if a delimiting character is encountered (see column 11, lines 36-45, *where the URL is decomposed into components that are separated by delimiters such as a period, and slash mark, implying a determination if a delimiting character is encountered)*;

using the hash code associated with the clause to traverse a tree data structure representing clauses of URLs and corresponding resources or rules (see column 11, lines 24-30, *describing compiling the decomposition tree with successive hashing codes generated for each URL segment* and column 12, lines 1-14, *describing how the URL hash codes are traversed (i.e. hash codes used as indices in a forwarding table) when a web request is received in order to retrieve the requested web content)*; and

matching the URL to resources or rules based on the traversing of the tree data structure (see column 12, lines 54-66, *describing that web content data (i.e. resource) is retrieved by traversing URL hash codes in the form of a forwarding table and pointers).*

Although the system disclosed by Michel shows substantial features of the claimed invention (discussed above), it fails to disclose progressively hashing character by character and wherein each node of the tree data structure has an associated multidimensional hash table.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Michel, as evidenced by Guha in view of Bensoussan.

In an analogous art, Guha discloses a system for rapidly identifying the existence and location of an item in a file using a hash table architecture, searching for a particular item performed by identifying the appropriate hash bucket by obtaining a primary hash key for a search term (see Abstract). Further showing a character by character hashing algorithm used to create a hash code (see column 6, lines 5-10, *describing successive exclusive-OR operations on the characters forming the character string, where successive implies an operation done on each character making up the character string).*

Given the teaching of Guha, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Michel by employing a character by character hashing, such as disclosed by Guha, in order to generate a large number of unique hash codes.

In considering the multidimensional hash table, although the system disclosed by Michel in view of Guha shows substantial features of the claimed invention (discussed above), it fails to disclose that each node of the tree data structure has an associated multidimensional hash table.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Michel in view of Guha, as evidenced by Bensoussan.

In an analogous art, Bensoussan discloses handling of data in multidimensional computer databases, and managing, aggregating and reporting data in a multidimensional database (see column 1, lines 8-12) and each account in the multidimensional database can hold multimedia content (see column 2, lines 5-8). Further, Bensoussan discloses the use of a multidimensional hash table (see column 9, lines 26-34, *describing a 3 dimensional hash table that contains data relating to an owner of the hashing table*). Furthermore, it is obvious to apply Bensoussan to Michel in view of Guha because URL data is hierarchical and the system of Bensoussan provides a storage system for retrieving data related to hierarchical data that can also be linked in the form of a tree structure (see column 7, lines 45-57 and column 7, line 66 –

column 8, line 6, *describing how a three-dimensional cube can have a three-dimensional sub-cube attached with further details describing an element in the parent cube*).

Given the teaching of Bensoussan, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Michel in view of Guha by employing a multidimensional hash table, such as disclosed by Bensoussan, in order to retrieve large amounts of hierarchical data quickly (see Bensoussan column 1, lines 33-42).

As per claims 2,12, Bensoussan further discloses calculating a target value based on the hash code and dimensions of a multidimensional hash table associated with a current node in the tree data structure (see Fig. 15, *describing a calculating of a target value that goes through each hash table in the multidimensional hash table looking for a particular element that is referenced by the hash table; in considering the current node in the tree data structure, it is obvious that the multidimensional hash table is part of the tree structure in the hierarchical model described earlier in* column 7, lines 45-57 and column 7, line 66 – column 8, line 6*)*.

As per claims 3,13, Bensoussan further discloses using the hash code further includes using the target value to identify an entry in the multidimensional hash table corresponding to a subtree associated with the clause (see column 7, lines 45-57 and column 7, line 66 – column 8, line 6, *where it is obvious that the sub-cube (i.e. subtree) will be queried to look for a value if that value is located in the sub-cube; in this case it is obvious that the clause disclosed by Michel is located in the sub-cube, thereby requiring the multidimensional hash table to point to the sub-cube to locate the clause*).

As per claims 4,14, Michel further discloses that traversing the tree data structure includes setting the current node of the tree data structure to be a root node of the subtree associated with the clause (see column 12, lines 41-56).

As per claims 8,18, Michel further discloses searching the current node for target resources or rules (see column 12, lines 1-5 and 8-14); and

adding any target resources or rules to a list of matched resources or rules (see column 12, lines 34-47).

As per claims 9,19, Michel further discloses determining if there are any child nodes of the current node corresponding to a "wildcard" node (see column 6, lines 29-42 and column 12, lines 44-47); and

adding any target resources or rules associated with the "wildcard" node to a list of matched resources or rules (see column 16, lines 10-20).

As per claim 10, Michel further discloses returning a list of matched resources or rules to a calling application (see column 17, line 50 – column 18, line 19, *where calling application is application used to access the web content (i.e. the user requesting application) and returning the resource is returning the web content referenced by the URL hash codes*).

5. Claims 5,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michel in view of Guha in view of Bensoussan as applied to claims 2 and 12 above, and further in view of Hendren (WO 00/58871).

As per claims 5,15 although the system disclosed by Bensoussan discloses that the entries for subtrees in the multidimensional hash table are positioned in the multidimensional hash table using equation:

$T_h \leftrightarrow \{ (h\%X), (h\%Y), (h\%Z) \}$ wherein T_h is a target object in the multidimensional hash table, h is a hash value for a root node of a subtree, and X, Y and Z are dimensions of the multidimensional hash table (see column 9, lines 26-34, *where dim 1, dim 2 and dim 3 can be named any variable such as after coordinates axes x y and z,* and see Fig. 13*, where it shows that an element in the cube is a hash table with the dimensions of x,y and z; thereby implying a target object is an entry positioned in the cube with a hash value of each dimension x,y and z)*, it fails to specifically use a modulo operator.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Michel in view of Guha in view of Bensoussan, as evidenced by Hendren.

In an analogous art, Hendren discloses a system for selecting one of a plurality of caches that store information received from network sites; and identifies the location of a resource within a domain and selecting a cache based on the information that identifies the location (see Abstract). Further, Hendren shows a hash function that transforms a complete URI into a number, the hash function could add the ASCII values of all the characters in the URI and modulo (i.e. %) divide by the number of caches (see page 8, lines 20-23).

Given the teaching of Hendren, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Michel in view of Guha in view of Bensoussan by employing a modulo divide by the number of caches, such as disclosed by Hendren, in order to evenly distribute the resources among the cube. In considering doing a modulo by the dimensions, it is obvious since the hash table is multidimensional, the module would be performed on each side of the hash table in order to place the resource in the multidimensional hash table evenly.

6. Claims 6-7,16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michel in view of Guha in view of Bensoussan as applied to claims 2,12 above, and further in view of Agrawal et al. (US 5,832,475), herein referred to as Agrawal.

Although the system disclosed by Michel in view of Guha in view of Bensoussan shows substantial features of the claimed invention (discussed above), it fails to disclose that the has table is created by growing the multidimensional hash table such that hash collisions are avoided.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Michel in view of Guha in view of Bensoussan, as evidenced by Agrawal.

In an analogous art, Agrawal discloses a system for performing database queries using hash-based grouping methods (see Abstract). Further, Agrawal shows the advantages of using an array-based multidimensional hash table in order to avoid collisions (see column 14, lines 17-

22, *since an array is used and collisions do not occur, implies that the hash table is able to grow to fit all of the hash values without collisions*).

Given the teaching of Agrawal, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Michel in view of Guha in view of Bensoussan by employing a hash table such that collisions are avoided, such as disclosed by Agrawal, in order to avoid collisions, thereby avoiding the need to compare values after hashing (see Agrawal column 16, lines 53-55).

As per claims 7,17, Agrawal further discloses that the multidimensional table is grown by a total number of dimensions for the multidimensional (see column 5, lines 22-29, *describing the steps involved in determining how a data cube should be generated based on the set of attributes and aggregate functions* and column 4, lines 38-67, *describing the N-dimensional cube operator that is used depending on the number of aggregate functions, thereby implying that the dimensions of the cube are grown based on the number of attributes*).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J. Chea whose telephone number is 571-272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Philip J Chea
Examiner
Art Unit 2153

PJC 1/15/08

GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100